Agenda Item #1: Review and Approve Minutes

MINUTES
CITY OF ROCKVILLE
TRAFFIC AND TRANSPORTATION COMMISSION

Community Planning and Development Services Conference Room
Meeting No. 09-04
September 28, 2004, 7:00 p.m.

Commissioners Present:	Alan Levine, Acting Chair	
	Ephrem Asebe	Elizabeth Crane
	Jon Oberg	Amy Rosselle
City Staff:	Katherine Kelly, Larry Marcus	

1. Review and Approve Minutes
   a. Minutes from the August 2004 meeting were approved with spelling changes.

2. Review of Staff Report and Updates
   a. Staff Report (Weekly)
      - Commissioners suggested the intersection of Richard Montgomery Dr. and MD/355 as a location for Countdown Pedestrian signals. This would require coordination with SHA.

   b. Permit Parking
      - Staff presented a map of proposed permit parking zones and stressed that the idea for the creation of zones is to ease the administrative process.
      - Commissioners reached consensus on the following:
        - They conceptually support the idea of taking on this responsibility but it will need to be a phased in process in order to refine the mechanics for granting permits (i.e., will the granting of permit parking require a quorum, will there be a sub-committee of the Commission to address permit parking, etc.)
        - They support the idea of the Commission taking on more responsibilities that grant services for the City
        - The Commission's charter will need to be changed to reflect that they have authority to designate permit parking areas. They request the change include a clause that they can defer a final decision to Mayor & Council if complications arise (i.e., if an area is permitted and residents or business owners raise concerns about shifts in parking from one area to another).
      - Commissioners requested that there be a requirement that public notices be sent to areas adjacent to the applicants' area prior to final designation as a permit parking area.

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- Commissioners voted to assume the responsibility of permit parking approvals as presented in the 9-21-04 memo to the City Manager.

c. Town Square Development Schedule and Phases
- Staff directed Commissioners to the City website, which has the general development schedule as well as construction and truck phasing.

d. Town Center Traffic Calming Strategy and Schedule
- Staff updated Commissioners on the schedule for Citywide Traffic Calming meetings.

e. Town Center Capacity Report
- Staff updated Commissioners on a Town Center capacity study.

f. Letter sent to SHA Regarding Intersection Improvements
- Staff presented a copy of the final letter sent to SHA regarding the "top priority" intersections throughout the City for safety improvements and noted that an agenda item for next month's meeting will be a review of the next "top priority" intersections.
- Commissioner Oberg stressed that the King Farm community will continue to pressure SHA to improve the intersection of MD355 and King Farm Blvd. Staff reaffirmed their support.

g. CTR
- Staff mentioned that the CTR will be presented to Mayor & Council for approval on Mon., Oct. 4th.

h. Status of Pedestrian Access from the Maryland Ave. Extension to MD355
- In response to inquiries at the Aug. meeting, there was brief discussion about the final design of Town Square. Commissioners had expressed concerns about access from Maryland Ave. extension to MD355. Staff reiterated that the final project approval design is what is scheduled to be implemented.

i. Status of Pedestrian/Bicycle Bridge over I-270
- Commissioner Oberg had inquired about the proposals for the I-270 bridge, since they had all come in over-bid. He asked what the next steps for the City are and what lessons could be learned.
- Parks and Recreation staff provided a brief write-up response. Commissioners expressed thanks.

3. <u>Review of Draft Memo re: Streetlight Maintenance</u>

a. Chair Resnick had drafted a memo regarding streetlight maintenance, based on discussions at the July and August meetings.
b. Staff relayed the challenges of assuming maintenance responsibilities of streetlights (i.e., staff time, a law that states that only PEPCO employees are allowed to go closer than 10' to a PEPCO pole).
c. Commissioner Oberg asked if there were other avenues that might improve PEPCO service and not require the City to take on the maintenance responsibility.
d. Staff and Commissioners agreed that it would be useful to define standards for response time, priority locations (school and transit zones, e.g.), safety, and management issues. Staff agreed to begin this process.

e. Commissioner Levine suggested that this would be useful in laying out standards for hiring a contractor to review the status of streetlight maintenance throughout the City.
f. Commissioner Levine will report this information back to Chair Resnick.
g. Staff agreed to begin listing example locations where streetlight maintenance has been a problem.

4. Discuss Update of Neighborhood Traffic Control Guidelines
   a. Staff provided copies of the Neighborhood Traffic Control Guidelines (2002) and asked that Commissioners review them prior next month's meeting.
   b. Staff noted that, due to "lessons learned" about traffic calming since publication of the current guidelines, certain guidelines may require revision.

5. City's Inventory of Accident Data
   a. A write-up about the status of the City's accident data was presented. Commissioners thanked staff for the information and requested that staff keep "to-do" list the creation of GIS once updated information from SHA is obtained.

Adjournment: The meeting was adjourned at 9:00 p.m.

Agenda Item #2: Comprehensive Transportation Review with Applicant

Review of Upper Rock Comprehensive Transportation Review /Transportation Report

- On October 4, 2004, Mayor and Council adopted the Comprehensive Transportation Review (CTR) Methodology (see: *http://www.rockvillemd.gov/residents/traffic/pdf/CTR10042004.pdf).*

- Step 10 of the Comprehensive Transportation Review reads:
  "*Traffic & Transportation Division identifies impacts and mitigation measures in conjunction with other City staff and applicant. A public meeting, announced via mail and e-mail notification to HOA and Civic Association leaders, will be coordinated by staff to present the proposed study area and development impacts, and solicit comments prior to preparation of the Transportation Staff Report.* ***This meeting will take place one time per month, as part of the regularly-scheduled Traffic & Transportation Commission meetings****. If the timing of a development application is such that a meeting would need to be convened prior to the Traffic & Transportation Commission meeting, staff will send out special notifications."*

- A representative of the JBG Companies will present to the T&T Commission a Transportation Report for the "Upper Rock District" site prepared in coordination with traffic consultants Wells & Associates. In the summer of 2004 JBG Companies conducted extensive public outreach and held a public charrette, which included comments and input from HOA and Civic Association leaders, as well as the general public. They would now like to receive input and comment from the Traffic & Transportation Commission, prior to Traffic & Transportation Division's preparation of Transportation Staff Report.

  For more information on this proposed project, see:
  http://www.rockvillegateway.com/

Proposed Mitigations as of 10/21/2004:

1. Obtain permits from Montgomery County and construct, prior to occupancy, the following off-site road improvement projects:

a A right turn lane from eastbound Shady Grove Road to southbound Choke Cherry Road per DPW and County requirements.
b. Right turn lane from northbound Choke Cherry onto Shady Grove Road and associated markings per DPW and County requirements.
c. Lengthen the left turn bay from Shady Grove 280-feet with a 100-foot taper onto Choke Cherry per DPW and County requirements.
d. An additional westbound left turn lane from Shady Grove Road onto southbound Gaither Road and additional receiving lane on Gaither Road per DPW and County requirements.
e. Construct right turn lane from Shady Grove Road onto Gaither Road per DPW and County requirements.
f. Provide pedestrian refuges at the medians along Shady Grove Road at the intersections of Choke Cherry and Gaither per DPW and County requirements.

2. The Applicant shall install three traffic calming devices in the Redland corridor between Piccard Drive and Pleasant Road in the adjacent King Farm community. The devices will be coordinated with the King Farm community, approved by staff and finalized at the USE permit stage.

3. (USE permit condition) The applicant shall contribute $125,000 into the City's Transportation Improvements CIP Fund towards the future installation of a traffic signal at the intersection of Choke Cherry and Piccard Drive if the signal meets warrants. If the signal is not warranted within XX years of full buildout of the project, the monies shall go towards additional traffic control devices in the immediate vicinity.

4. The Applicant shall upgrade the pedestrian safety infrastructure at the intersections of Shady Grove/Choke Cherry and Shady Grove/Gaither per DPW and County requirements.

The following conditions of approval will be incorporated into subsequent USE permits associated with this application:

1. Applicant shall contribute, prior to issuance of building permits, a monetary contribution of $13,000.00 for the implementation of two bus shelters to be located at the bus stop along Shady Grove Road, nearby to the subject site. This contribution will be incorporated into the Bus Stop Beautification CIP.

2. All internal and external traffic control devices (i.e., signs, signals, marking, and devices placed on, over or adjacent to a roadway or pathway to regulate, warn, or guide pedestrians and/or vehicular traffic) shall comply with the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD). A signing and pavement marking plan shall be submitted to the Department of Public Works and approved by the Chief of Traffic & Transportation before the issuance of a Public Works Permit.

3. A Transportation Demand Management (TDM) agreement must be executed between the application and the City of Rockville prior to the issuance of building permits. This agreement will require the applicant to make a contribution of ten (10) cents a square foot of gross floor area of the proposed new building and $60 per market rate dwelling unit per year for a period of ten (10) years. These funds will be used for various programs designed to reduce the number and impact of vehicle trips within the City of Rockville. The funds will be used for the purpose of TDM and the requested agreement will specify the timing and other requirements of future payments of the TDM fee. This sum will be incorporated into the TDM capital improvements program funds of the City.

4. Applicant shall provide bicycle lockers or bike storage room for residential uses and bike racks for retail uses at locations approved by the Department of Public Works. The number of bicycle storage facilities will be determined with staff and the applicant through the USE permit process.

Agenda Item #3.a. Staff Report and Updates: (Weekly)

City of Rockville

TO BE INSERTED

Town Center Capacity Consultant Report

Table of Contents

1. INTRODUCTION

With the potential for further development and redevelopment, the City of Rockville, Maryland is interested in the future traffic impacts to its downtown street system. Through an existing task order contract, the City requested transportation consultant services from BMI-SG to perform a transportation study of the Rockville downtown core area. The emphasis of this study was the analyses of the traffic impacts generated by three potential future year development scenarios.

1.1 Objective of Study

The primary objective of this study was to provide information that would assist the City of Rockville in deciding upon its future downtown planning strategy. Specifically, the goal was to 1) develop future traffic projections based on three potential future development scenarios, 2) assign projected traffic onto the future study area street system, 3) analyze the potential traffic impacts associated with each scenario, 4) identify minor street improvements needed to accommodate the projected traffic demand, and 5) present the major findings and results, in terms of traffic affects, on the downtown study area street system.

1.2 Background

The City of Rockville is located northwest of Washington, D.C., along the I-270 and MD 355 (Rockville Pike/Hungerford Drive) corridors. The City occupies approximately 13 square miles, with a population of approximately 47,388 in 2000. Currently, there is very little vacant land left in the City. The City's Comprehensive Master Plan has established the growth and developments goals for the community. However, the City anticipates pressure to develop and redevelop land parcels within the downtown core area. As such, the City is concerned about the potential overloading of the downtown street system due to future development.

To make a decision about future growth, the traffic impacts on the downtown core area and on nearby residential neighborhoods must be identified, evaluated and considered. Once these impacts are considered, the overall downtown planning effort will focus on the promotion of high quality, mixed-use development with an attractive pedestrian environment and adequate traffic circulation.

The City developed three (3) specific future year scenarios to be evaluated.

The traffic impacts associated with the above described potential future year scenarios were then analyzed by BMI-SG.

1.3 Study Area

There were a total of 25 key intersections, identified by the City staff, to be analyzed as part of the study. These intersections were:

1. Route 28 and Laird Street
2. Route 28 and Great Falls Road

3. Great Falls Road and Maryland Avenue
4. Route 28 and Washington Street
5. Route 28 and Maryland Avenue
6. Route 28 and Monroe Street
7. Route 28 and Nelson Street
8. Route 28 and Rockville Pike
9. Route 28 and First Street
10. First Street and Baltimore Road
11. Rockville Pike and First Street
12. Rockville Pike and Richard Montgomery Drive
13. Rockville Pike and Church Street
14. Rockville Pike and Middle Lane
15. Rockville Pike and Mannakee Street
16. Rockville Pike and Beall Avenue
17. N. Stonestreet Avenue and Park Road
18. S. Stonestreet Avenue and Park Road
19. N. Washington Street and East Montgomery Avenue
20. N. Washington Street and Middle Lane
21. N. Washington Street and Beall Avenue
22. N. Washington Street and Martins Lane
23. N. Washington Street and Rockville Pike
24. Maryland Avenue and Middle Lane
25. Maryland Avenue and Beall Avenue

The traffic impacts associated with the network of roadways and key intersections mentioned above formed the basis of the Rockville Town Center Traffic Analysis. The key intersections are shown in Figure 1. ***(to be inserted)***

2. DATA ASSEMBLY

BMI-SG met with the City of Rockville staff to gather the necessary data needed to perform the downtown traffic study. Data requirements associated with land use planning, trip generation/traffic forecasting and operational analyses were discussed. Specific information provided by the City staff included:

- ⋕ Turning movement count data, lane configurations, and calculated Critical Lane Voluems (CLVs) at the 25 key intersections in an Excel spreadsheet.
- ⋕ Aerial photography of the study area.
- ⋕ Estimates of potential build-out, in gross square footage, and type of land use for each parcel in the study area for the three potential build-out scenarios.
- ⋕ Estimates, by parcel, with respect to anticipated shared public parking for new developments and redevelopments.
- ⋕ A map that shows the anticipated locations for driveways and off-street parking areas for the new developments and redeveloped parcels.

As part of the data assembly, BMI-SG conducted a field reconnaissance of the study intersections. In particular, BMI-SG collected data at the two intersections not included

in the Excel spreadsheet provided by the city (the intersections of Route 28 and Nelson Street and First Street and Baltimore Road). Roadway data (e.g., number of travel lanes on all streets in the network, lane use for all approaches, lengths of left turn and right turn lanes, location of all on-street parking spaces, locations of existing driveways, etc.), traffic control features (e.g., signal timings/phasing), transit information (e.g., routes and bus stop locations), site survey data (e.g., specific trip generation rates) and traffic performance were gathered and verified.

3. FUTURE CONDITIONS

3.1 Background Traffic

BMI-SG incorporated traffic forecasts that were generated by others under previous efforts. The previous traffic forecasts included the following developments:

1. *Rockville Metro Plaza*
2. *11 North Washington Street*
3. *RCI*
4. *21 Church Street*
5. *22 West Jefferson*
6. *Sandy Springs Bank*
7. *Richard Montgomery H.S.*
8. *Tower Oaks*
9. *KSI*
10. *Archstone*
11. *Rockville Town Center*

Trips generated by these developments were then added to the turning movement counts conducted during the past five years at the key 25 intersections. This constituted the background traffic projection for each scenario.

A review of the traffic data revealed that the turning movement counts were not conducted for all intersections on the same day. It was found that traffic exiting one intersection did not approximately equal traffic entering the next intersection, resulting in unbalanced traffic flows. Using knowledge of existing land use and estimates of existing in/out site specific trips, BMI-SG identified adjustments that would need to be made to "balance" the peak hour turning movement counts at the key study area intersections. BMI balanced the existing turning movement volumes for the two peak hours of traffic.

3.2 Development Scenarios

Three future development scenarios were developed by the City staff, hereafter referred to as Scenarios 1, 2, and 3. Each scenario consists of 42 separate potential development parcels, whose locations are illustrated in Figure 2. The density or developable area varied for most of these development parcels form one scenario to the next. Development totals for each scenario are shown in Table 1 by type of development. In the table, "Proposed Development" is the amount of development or redevelopment on the 42 parcels and "Existing Development" is the amount of development that will be replaced by the proposed development. The "Additional Non-Residential" development is the difference between the proposed and existing developments. A detailed listing of the by

scenario amount of development for each of the 42 development parcels is provided in Appendix A.

Table 1. Development Summary for Each Scenario

	Proposed Development							Existing Development				Additional Non-Residential	Total Res.
	Office (sq. ft.)	Retail (sq. ft.)	Indust. (sq. ft.)	Other (sq. ft.)	MF (no. of units)	SFA (no. of units)	SFD (no. of units)	Office (sq. ft.)	Retail (sq. ft.)	Indust. (sq. ft.)	Other (sq. ft.)		
1	3,064,480	680,630	114,000	424,850	2,180	333	78	295,690	248,330	308,560	38,000	3,393,380	2,591
2	2,195,490	682,860	114,000	424,850	2,514	333	38	170,410	234,340	308,560	38,000	2,665,890	2,885
3	3,287,370	703,860	114,000	229,850	3,122	489	38	295,690	248,330	308,560	38,000	3,444,500	3,649

3.3 Programmed Roadway Improvements

The following road improvements were assumed to be completed for the future year traffic analysis:

- The extension of Dawson Avenue to the east, terminating with at an intersection with MD 355 (Hungerford Drive).
- The extension of Maryland Avenue to the north, terminating at a roundabout with the future Dawson Avenue.
- The extension of Fleet Street between Mount Vernon Place and Ritchie Parkway.
- The creation of Newmarket Street, a one-way street in the northbound direction, from East Middle lane to Beall Avenue. This street will be located approximately equidistant between North Washington Street and the future Maryland Avenue (about 280 feet from either existing street).
- The creation of Renaissance Avenue, a two-lane, two-way street from East Montgomery Avenue to East Middle Lane. This street will be between Maryland Avenue and Monroe Street, across from the access to the Foulger-Pratt Rockville Metro Plaza.
- The addition of a median on Beall Avenue between North Washington Street and MD 355.

The following intersection improvements were assumed to be completed for the future year traffic analysis:

- *West Jefferson Avenue and Great Falls Road*: West approach is changed from one exclusive left turn lane, two through lanes, and an exclusive right turn lane to one exclusive left turn lane, one through lane, and a shared through and right turn lane. Construction on this change is now complete.
- *West Montgomery Avenue and Nelson Street*: East approach is changed from two through lanes and a channelized right turn to two through lanes and a shared through and right turn lane. South approach is changed from a shared through and left turn lane and a free-flow right turn lane to a shared through and left turn lane and a non-free-flow right turn lane.
- *Maryland Avenue and East Middle Street*: Intersection is changed from an unsignalized to a signalized intersection.

3.4 Traffic Projection Methodology

The projected traffic volumes for the three future scenarios were derived by adding the projected increase in trips from each development in each scenario to the background traffic. BMI-SG created Excel spreadsheets to perform trip generation and trip distribution calculations and modified the Excel spreadsheets provided by the City staff to perform traffic assignments, CLV analysis, and level of service (LOS) calculations. A detailed explanation of the functionality of these Excel files and the procedure used to obtain future year traffic projections is included in Appendix B.

3.4.1 Trip Generation

The AM and PM peak hour traffic generated from each scenario was determined using ITE trip generation rates obtained from the 7th Edition of the *ITE Trip Generation Manual*. Retail developments were assumed to consist of one-third high turnover sit-down restaurant and two-thirds retail shopping. Trips generated by developments classified as "other" were evaluated by the closest land use provided by the Trip Generation Manual and when the specific use could not be determined, trips generated were assumed to be 1 trip per 1000 square feet of floor area. Table 2 shows the equivalent land use in the Trip Generation Manual for the specified development types for this study. The number of trips generated for each scenario are shown in Table 3 and Appendix C shows the trips generated by each development parcel in each scenario.

Table 2. Trip Generation Manual Equivalent Land Use Types

Table 3. Trip Generation Totals for Each Scenario

	AM Peak			PM Peak		
	In	Out	Total	In	Out	Total
Scenario 1	3963	1596	5559	2394	4722	7116
Scenario 2	3528	1622	5150	2399	4280	6679
Scenario 3	4515	1933	6448	2772	5258	8030

BMI-SG then adjusted the trips generated to account for the mode share for the residential trips generated. Using the mode-choice data from the 1994 Census update and the year 2000 Census data, it was determined that the number of trips generated from the Trip Generation Manual would be reduced by 20 percent. Office trips were reduced by 15 percent.

BMI-SG then developed estimates of trip capture rates for the proposed retail for each development. Trip capture rates estimate the portion of existing trips that are captured by a proposed new development. Rates were developed using information from the *ITE Transportation and Land Development Manual* and engineering judgment and are 15 percent.

The final estimated number of peak hour trips generated for each scenario by development parcel is shown in Appendix C.

3.4.2 Trip Distribution

BMI-SG developed generalized trip distributions for the net new site generated trips (i.e., new trips = total site generated trips less captured trips). Some of the new site-generated trip productions were distributed to new site-generated attractions (i.e., I-I trips). Most of the new site-generated trip productions and attractions were distributed to external stations at the cordon line of the study area (i.e., I-X and X-I trips). A generalized distribution of these trips is shown in Figure 3. The generalized equivalent number of trips based on this distribution are included in Appendix C.

3.4.3 Traffic Assignment

Trips to/from external stations were assigned to the roadway network to planned parking garage/public-shared parking facilities identified by the City staff for each development parcel. This traffic assignment was completed for both the AM and PM peak hours for each scenario, resulting in an initial estimate of traffic through the network for the three development scenarios (called all-or-nothing assignment). These initial traffic assignment estimates were then refined based on capacity considerations at intersections to result in the final traffic projections for each scenario (called equilibrium assignment). That is, when the v/c ratio for a selected intersection was one or greater and an alternative route existed which had a v/c ratio less than one, trips were reassigned to the intersection with the lower v/c ratio.

5. TRAFFIC OPERATIONAL ANALYSES

5.1 Methodology

BMI-SG performed a traffic operational analyses of the 25 key intersections for both the AM and PM peak hours, focusing on the existing traffic conditions and the estimated traffic impacts associated with the three potential future development scenarios.

The critical lane volume method (CLV) was utilized to calculate the level of service (LOS) for the key intersections. The CLV method provides a basic assessment of whether or not capacity is likely to be exceeded given the traffic demand and intersection geometry. The procedure does not consider traffic composition or specific geometrics such as lane width, turn bay length, parking conditions, etc. Rather, the CLV method identifies critical movements at an intersection by assigning vehicles to specific lanes. Traffic is assigned to specific lanes through the use of lane use factors. These lane use factors are applied to the traffic volumes for a specific movement based on the number of lanes. The lane use factors used for this analysis are shown in Table 4.

Table 4. Lane Use Factors

Number of Lanes	*Lane Use Factor*
Through	
1	1
2	0.525
3	0.36
4	0.3

5	0.25
Left Turns	
1	1.1
2	0.6
3	0.38

The total critical lane volume for the intersection is determined by summing the maximum single lane volume for a particular movement for a signal phase. Two-way stop controlled intersections are assumed to have two signal phases. The total critical lane volume is then compared to the capacity of the intersection, which is a function of the cycle length and the number of phases for the traffic signal. Table 5 shows the capacity utilized for various cycle lengths and phases. The total critical lane volume divided by the capacity results in a volume to capacity ratio for the intersection, which is used to evaluate the LOS of the intersection. LOS values for different v/c ratios are presented in Table 6.

Table 5. Intersection Capacity

No. of Phases / Cycle Length	2	3	4
60	1500	1400	
90	1600	1500	1400
120	1650	1600	1500
150	1700	1650	1550

Table 6. LOS Threshold Values

v/c Ratio	LOS
0.0	A
0.6	B
0.7	C
0.8	D
0.9	E
1.0	F

The analyses also employed the use of computer traffic simulation techniques to evaluate the downtown street system. Simulation techniques provide a truer estimate of traffic performance, particularly when dealing with traffic flows and the affects of one roadway location on another. BMI-SG applied the Synchro and CORSIM computer traffic simulation models to perform these traffic operational analyses. The analyses focused on evaluating the traffic performance at the key 25 intersections in the study area as a "system", rather than evaluating each intersection independently as is the case with the CLV analysis.

CORSIM models traffic operations based on a user specified street network that details roadway geometry, lane use, traffic control devices, traffic volumes, turn movements, types of vehicles (including bus routes and stops), various driver types, etc. The simulated street network can be analyzed in two different ways. First, by comparing

various simulated output measures of effectiveness (MOEs) that measure the street network's traffic performance. MOEs, such as vehicle travel time, average speed, bus travel time/delay, delay/stop time, percent stops, phase failures, queue lengths, fuel consumption, etc. can be used to make quantitative comparisons between different improvements.

A second way to analyze the simulation results is by using TRAFVU, CORSIM's graphical output software program. The program allows the user to view graphical animations of traffic flows on the representative street network. One of the primary benefits of viewing the street network with TRAFVU is that movement conflicts and areas with congestion can be easily identified and the effects of various improvements can be seen. Likewise, side-by-side windows can be used to compare one alternative to another.

In the Rockville downtown traffic analysis, both the comparison of MOEs and TRAFVU were used. Various simulation MOEs, such as queue lengths, control delay, phase failures, etc. were used to assess the traffic impacts of the existing conditions and the three development scenarios. TRAFVU was used to visually display and review the results of the simulated condition.

One of the primary MOEs from CORSIM was vehicular delay, which forms the basis for LOS. Simply put, LOS is a subjective description of traffic performance. The basis of LOS can be found in the *2000 Highway Capacity Manual (2000 HCM)*. In the case of the Rockville traffic study, the evaluation of traffic performance focused along the downtown street system. The study area system was composed of arterial and collector streets, with the analyses concentrating on the 25 key signalized intersections identified by the City staff.

For signalized intersections, levels of service are evaluated based upon average vehicle delay experienced by vehicles entering an intersection. Control delay (or signal delay) includes initial deceleration delay, queue move-up time, stopped delay and final acceleration delay. In previous versions of the Highway Capacity Manual (1994 and earlier), delay included only stopped delay. As delay increases, the level of service deceases. (Note: The delay calculations for signalized and unsignalized intersections are different due to the variation in traffic control.) The levels of service associated with signalized intersections are summarized in Table 7.

Table 7. Level of Service at Signalized Intersections.

Signalized Intersections		
Level of Service (LOS)	Control Delay (seconds)	Description
A	≤ 10.0	Free Flow/Insignificant Delays
B	10.1 - 20.0	Stable Operation/Minimal Delays
C	20.1 - 35.0	Stable Operation/Acceptable Delays
D	35.1 - 55.0	Approaching Unstable/Tolerable Delays
E	55.1 - 80.0	Unstable Operation/Significant Delays
F	≥ 80.0	Forced Flow/Excessive Delays

Using CORSIM, BMI-SG simulated the traffic performance along the Rockville downtown street system for the existing conditions and the three potential future development scenarios. Then, using TRAFVU, we evaluated the study network. For a given simulation condition, TRAFVU provided graphical animations of traffic performance along the representative street network, where areas of conflicts and levels congestion (i.e., queuing) could be identified.

In addition, BMI-SG compared simulated measures of effectiveness (MOEs) to quantify the traffic performance. All the MOE threshold values applied in the study were based on the values found in the *2000 Highway Capacity Manual,* with the exception of signal phase failures. A phase failure is defined as the number of times during the simulation period that a queue fails to be discharged completely during a green phase at a signalized intersection. For this study, it was assumed that any location experiencing six or more signal phase failures, during the simulated peak hour condition, was considered a problem location.

For each simulation, the MOEs were evaluated in two ways. First, the study area street system was divided into six primary travel corridors. The six primary corridors were defined as:

- Eastbound (EB) MD 28
- Westbound (WB) MD 28
- Northbound (NB) MD 355
- Southbound (SB) MD 355
- Northbound (NB) North Washington Street
- Southbound (SB) North Washington Street
- Northbound (NB) Maryland Avenue
- Southbound (SB) Maryland Avenue
- Northbound (NB) Great Falls Road
- Southbound (SB) Great Falls Road

For each of the above primary travel corridors, the overall simulated MOEs for total travel time, average speed and the corresponding level of service were estimated.

Next, specific "hot spots" or the worst problem locations were identified. These would be locations operating at a level of service "E" or worse. The specific MOE threshold values used to determine a hot spot as shown in Table 8.

Table 8. MOE Threshold Values.

Measure of Effectiveness (MOE)	Threshold Value
Arterial Streets	
Average Travel Speed	≤ 9 mph
Signalized Intersections	
Control Delay	≥ 55 sec/veh
Signal Phase Failures	≥ 6 per peak hour

5.3 Conditions Analyzed

CORSIM simulations were performed for the AM and PM peak hour traffic flows on the downtown Rockville street network. Specifically, the existing conditions and the three future developments scenarios were simulated. This resulted in three individual simulated time periods for each of the four networks, for a total of 12 different simulation conditions.

Agenda Item #3.c: Staff Report and Updates: Permit Parking

Update on Permit Parking Procedures

At the September Traffic & Transportation Commission meeting, staff presented a map of proposed permit parking zones and stressed that the idea for the creation of zones is to ease the administrative process. Commissioners reached consensus on the following:

- They conceptually support the idea of taking on this responsibility but it will need to be a phased in process in order to refine the mechanics for granting permits (i.e., will the granting of permit parking require a quorum, will there be a sub-committee of the Commission to address permit parking, etc.)
- They support the idea of the Commission taking on more responsibilities that grant services for the City
- The Commission's charter will need to be changed to reflect that they have authority to designate permit parking areas. They request the change include a clause that they can defer a final decision to Mayor & Council if complications arise (i.e., if an area is permitted and residents or business owners raise concerns about shifts in parking from one area to another).

In addition,

- Commissioners requested that there be a requirement that public notices be sent to areas adjacent to the applicants' area prior to final designation as a permit parking area.
- Commissioners voted to assume the responsibility of permit parking approvals as presented in the 9-21-04 memo to the City Manager.

On October 4, 2004, Mayor and Council agreed to the items that Traffic & Transportation Commissioners reached consensus on and voted to implement. Next steps include:

- Revisions to the Traffic & Transportation Commission Charter (City of Rockville Legal staff)
- Discussion by Traffic & Transportation Commission on Phasing-in Process

Agenda Item #3.d: Staff Report and Updates: Town Center Traffic Calming Strategy and Schedule

Text of Letter Sent to HOA and Civic Association Presidents

October 14, 2004

Dear Homeowner and Civic Association President:

Subject: Creation of Steering Committees for Town Center Traffic Calming

The City of Rockville's Traffic and Transportation Division is developing a process to work with citizens to lessen cut-through traffic and improve safety and mobility in neighborhoods surrounding Town Center. The first step of this process involves the creation of a steering committee of 5-7 citizens for each neighborhood area (as shown on the attached map). Members on each committee will collaborate to review existing and future conditions and devise initial plans for traffic calming in their neighborhoods. To that end, we are asking for your help in identifying one or two interested residents from your neighborhood who could effectively serve as steering committee members.

The City of Rockville has set tentative dates for the steering committee meetings as follows:

- Area 1 – process has been established and is ongoing
- Area 2 – November 10th
- Area 3 – December 8th
- Area 4 – January 5th

Once each steering committee meets and establishes a traffic-calming plan, notification will be sent to all citizens of that neighborhood to participate in the second step of this process, which entails participation in a full neighborhood *charrette* ("brainstorming" session). The goal of the charrette is to present the initial draft plan, to ask for citizen feedback, and to reach consensus on a final draft plan for each neighborhood.

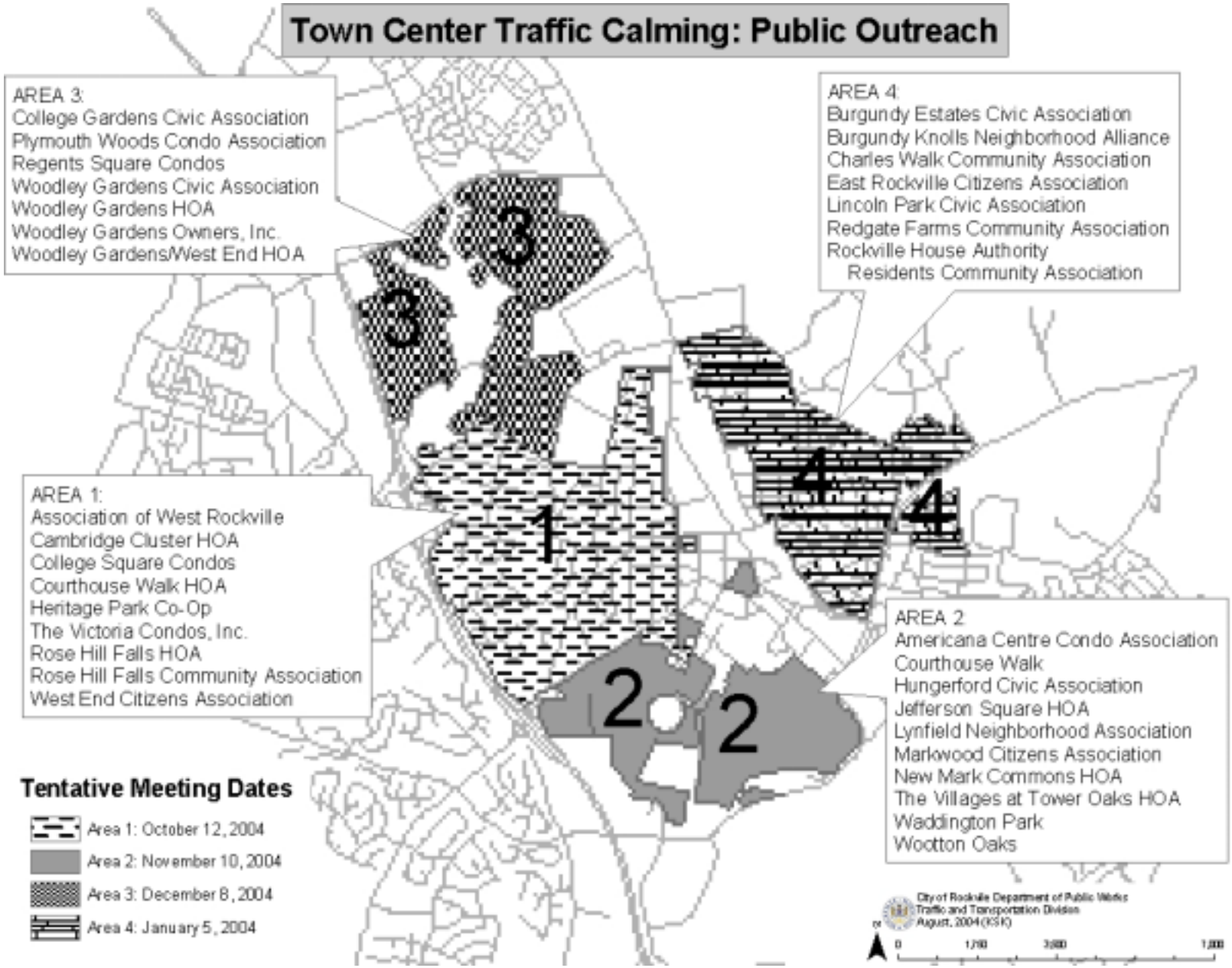
The third step will be a citywide charrette. Following the charrettes for each neighborhood, all citizens from the different neighborhoods will be called together for a larger charrette. The purpose of this charrette will be to present the different neighborhood draft plans and to determine the positive and negative effects of each neighborhood's recommendations on other areas of the City. Ultimately, the goal is to create a comprehensive transportation *system* that provides balanced solutions and does not favor one neighborhood over another.

City staff appreciates your assistance in facilitating the first step in this process of citizen involvement. If you have any questions concerning the creation or function of the steering committees, please contact Traffic and Transportation Division staff Christopher Delfs (240-314-8526, or email at cdelfs@rockvillemd.gov) or Katherine Kelly (240-314-8527, or email at kkelly@rockvillemd.gov). If you wish to speak with a Neighborhood Resources Coordinator, please contact Chris Bartlett (240-314-8342, or email at cbartlett@rockvillemd.gov) or Dwayne Jenkins (240-314-8343, or email at djenkins@rockvillemd.gov).

Sincerely,

Katherine Kelly
Transportation Planner

Cc: Chris Bartlett, Sr. Neighborhood Res. Coordinator
Dwayne Jenkins, Neighborhood Res. Coordinator


Town Center Traffic Calming: Public Outreach
AREA 3:
College Gardens Civic Association
Plymouth Woods Condo Association
Regents Square Condos
Woodley Gardens Civic Association
Woodley Gardens HOA
Woodley Gardens Owners, Inc.
Woodley Gardens/West End HOA
AREA 4:
Burgundy Estates Civic Association
Burgundy Knolls Neighborhood Alliance
Charles Walk Community Association
East Rockville Citizens Association
Lincoln Park Civic Association
Redgate Farms Community Association
Rockville House Authority
Residents Community Association
AREA 1:
Association of West Rockville
Cambridge Cluster HOA
College Square Condos
Courthouse Walk HOA
Heritage Park Co-Op
The Victoria Condos, Inc.
Rose Hill Falls HOA
Rose Hill Falls Community Association
West End Citizens Association
AREA 2:
Americana Centre Condo Association
Courthouse Walk
Hungerford Civic Association
Jefferson Square HOA
Lynfield Neighborhood Association
Markwood Citizens Association
New Mark Commons HOA
The Villages at Tower Oaks HOA
Waddington Park
Wootton Oaks
Tentative Meeting Dates
Area 1: October 12, 2004
Area 2: November 10, 2004
Area 3: December 8, 2004
Area 4: January 5, 2004
City of Rockville Department of Public Works
Traffic and Transportation Division
August, 2004 (KSK)

Agenda Item #4: Next "Priority" Intersections Requiring Improvements

To be inserted by 10/22/2004

Agenda Item #5: Discuss Update of Neighborhood Traffic Control Guidelines

To be inserted.

See: http://www.rockvillemd.gov/residents/traffic/pdf/guidelines.pdf

Agenda Item #6: Review of Draft Memo re: Streetlight Maintenance

To be inserted 10/22/2004